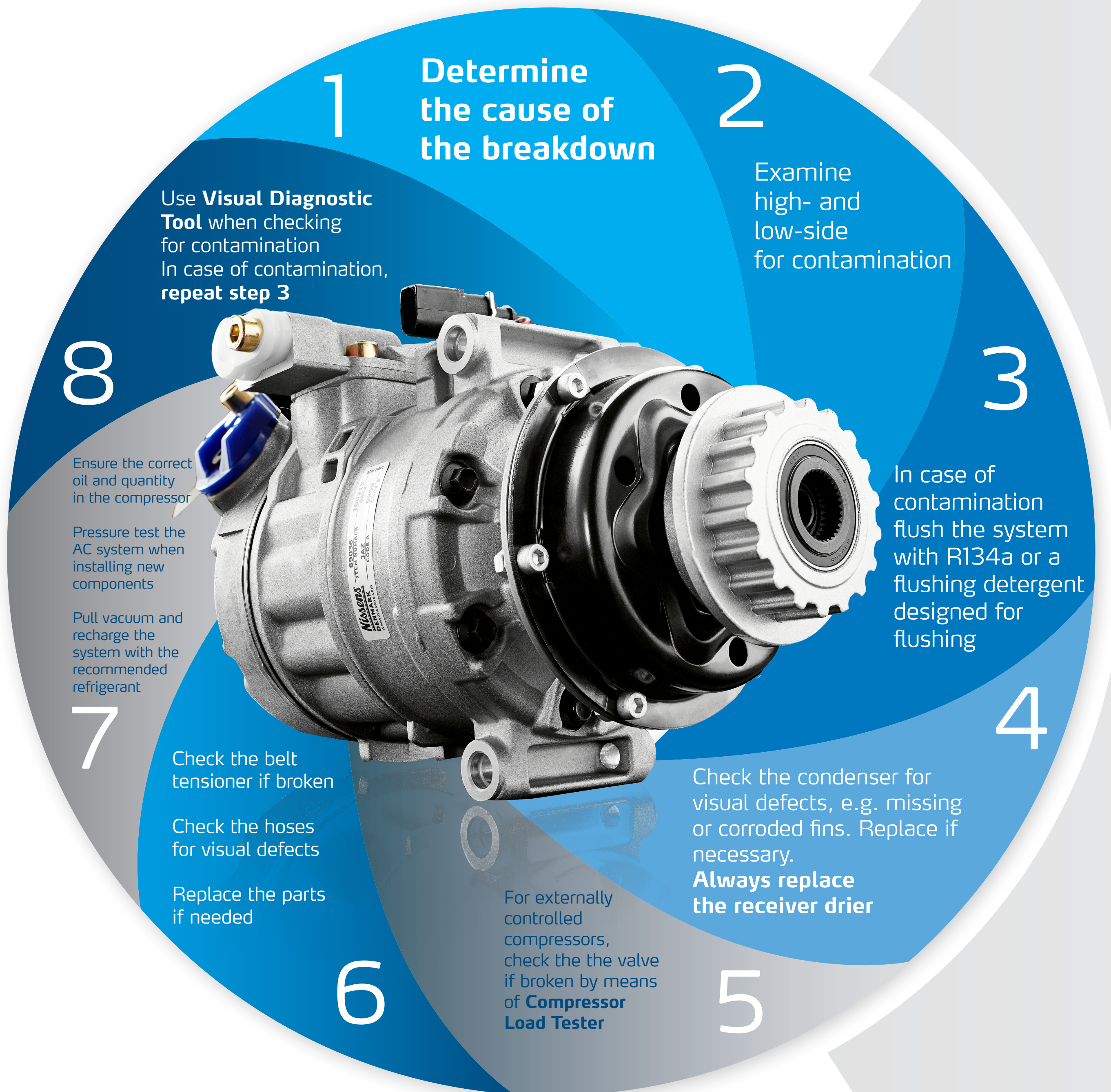


Guidelines for compressor installation in the AC system

Identifying & solving typical failures of the compressors



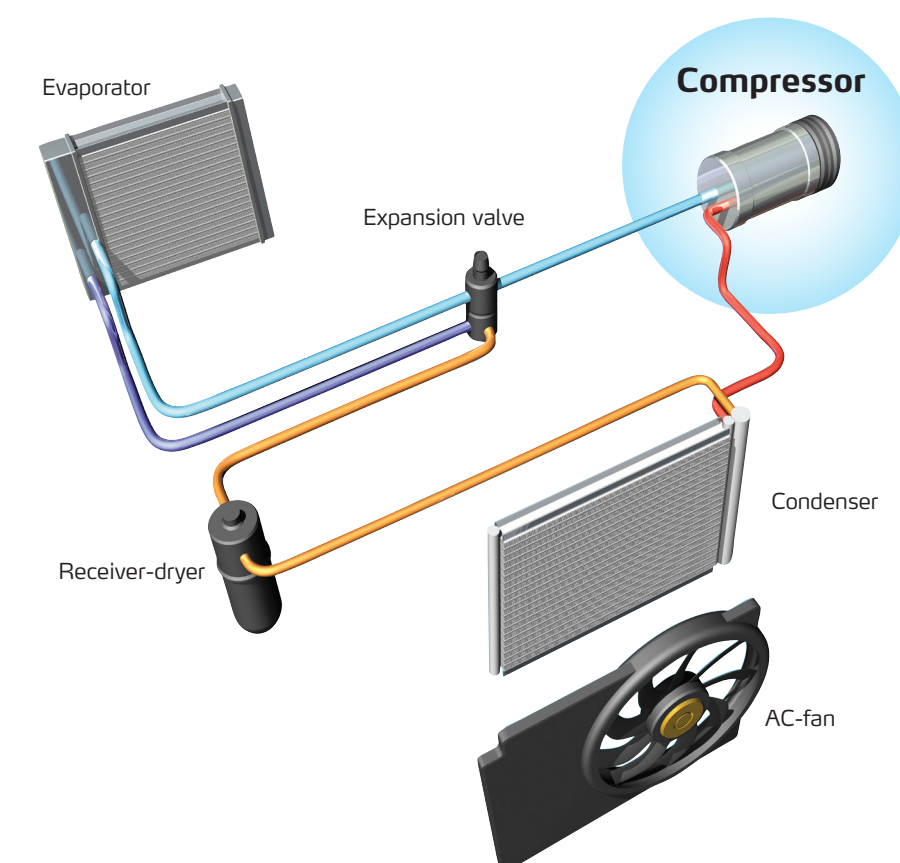
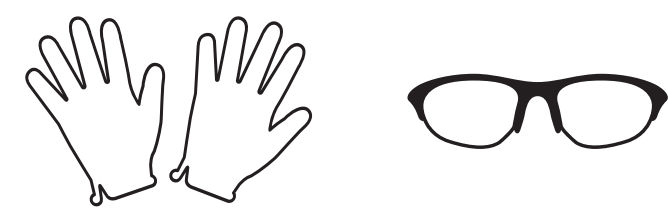
Problem	Cause	How to identify	Why the problem occurs	Solution	Preventive action
Does not create enough or any pressure	Compressor leakage or leakage in other system components	Use an UV dye agent or another leakage detecting equipment to identify leakages	<ul style="list-style-type: none"> Leakage in the compressor shaft: seal of the shaft is dried out because the compressor has not been used for a longer period of time thus the seal was not lubricated Surface damage of condenser because of stones/insects, corrosion, or damage for the system hoses due to frictions / physical impact from other parts The system connections are not sealed because of worn out o-rings 	<ul style="list-style-type: none"> Replace the damaged parts, as well as: receiver-dryer/cartridge or accumulator 	<ul style="list-style-type: none"> To avoid damage to the compressor shaft sealing, the system should be used on a regular basis (min 30 minutes a week) Apply parts that are corrosion protected (e.g. Nissens condensers) Always replace o-rings when installing a new part in the system Check regularly for corrosion on the AC system metal parts (hoses and tubes especially)
	The compressor clutch does not engage (compressors with magnetic clutch)	<p>While the AC system is switched on and set to produce a low temperature, the compressor pulley spins but the hub does not turn</p> <p>When switching the AC system ON/OFF, a 'click' must be heard from the compressor clutch</p>	<ul style="list-style-type: none"> The voltage in the system is too low thus the coil/clutch does not get enough electrical power to engage Electrical plugs of the compressor are not connected properly The wiring is not properly insulated (short cut) The shims/spacers of the compressor create a distance between the hub and the pulley that is bigger than 0.8 mm 	<ul style="list-style-type: none"> Check the electrical system to determine the cause of the low voltage, thoroughly check the compressor connections and wiring Make sure that the car computer software is up to date Replace the compressor if the problem is caused by the too long distance between pulley and hub 	<ul style="list-style-type: none"> When installing a new compressor, make sure that all wirings are connected properly and they are insulated
	Moisture in the system	<p>The AC system is on but produces cold air only periodically</p> <p>Expansion valve freezes</p>	<ul style="list-style-type: none"> Insufficient vacuum during system repair (installation of a new component) or service Leakage in the system 	<ul style="list-style-type: none"> Replace the following parts: O-rings, receiver dryer, dryer cartridge, accumulator tank, compressor, expansion valve, orifice tube It is highly recommended to replace the condenser The system must be flushed, otherwise all hoses, tubes and evaporator must be replaced 	<ul style="list-style-type: none"> Perform a proper vacuum when servicing the AC system or when installing a new part Make sure that the refrigerant charged in the system is 100% clean and free of moisture
Does not create enough or any pressure or Excessive noise from the compressor	Too high operation temperature of the compressor	<p>The compressor oil is black or contaminated</p> <p>Clutch has a brown or rusty color</p> <p>Physical damages to the condenser (mainly, fins of the condenser are broken or missing)</p> <p>Broken hub on externally controlled compressors</p>	<ul style="list-style-type: none"> Bad condition of the condenser causes overheating of the refrigerant and the oil Reduced or insufficient flow in the AC system caused by particles, e.g. clogged drier/condenser/expansion valve or orifice tube, the system was not flushed properly Improper amount of oil or refrigerant in the system causing overheating A dysfunction fan, interior blower or clogged air cabin filter causes the pressure increase in the system, thus the temperature to rise 	<ul style="list-style-type: none"> Replace the following parts: O-rings, receiver dryer, dryer cartridge, accumulator tank, compressor, expansion valve, orifice tube It is highly recommended to replace the condenser The system must be flushed, otherwise all hoses, tubes and evaporator must be replaced 	<ul style="list-style-type: none"> Carefully follow Nissens' compressor installation guide. Always use the right amount and type of oil dedicated to a specified vehicle The amount of UV dye used must never exceed 5% of the total volume of the oil
	Fluid Hammer	The shaft is stuck or broken	Noisy, hammering sound from the compressor	<ul style="list-style-type: none"> Improper operation of the expansion valve Insufficient vacuum of the system 	<ul style="list-style-type: none"> Replace the following parts: O-rings, receiver dryer, dryer cartridge, accumulator tank, compressor, expansion valve, orifice tube It is highly recommended to replace the condenser The system must be flushed, otherwise all hoses, tubes and evaporator must be replaced
Excessive noise from the compressor or Whistling noise from the dashboard	Bearing of the pulley is damaged	A rattling noise from the compressor	<ul style="list-style-type: none"> Low refrigerant level causes too high temperature thus dries out bearing 	<ul style="list-style-type: none"> Replace the compressor 	<ul style="list-style-type: none"> Carefully follow Nissens' compressor installation guidelines
	Low refrigerant level in the system	Filling station indicates that there is not enough refrigerant	<ul style="list-style-type: none"> Leakage in the system 	<ul style="list-style-type: none"> Fill the AC system with the right amount of refrigerant Determine leakage in the system, replace leaking parts 	<ul style="list-style-type: none"> Follow the service guidelines for the AC system.
Whistling noise from the dashboard	Expansion valve does not operate properly	The valve is clogged by impurities in the system	<ul style="list-style-type: none"> Impurities in the system, the system was not flushed during repair/service The expansion valve is defective 	<ul style="list-style-type: none"> Replace the expansion valve, flush the system 	<ul style="list-style-type: none"> Always replace the expansion valve when installing a new compressor Flush the system
	Clogged AC system	<p>Too low pressure on the system suction side</p> <p>Too high pressure on discharge side</p>	<ul style="list-style-type: none"> Impurities in the system, the system was not flushed during repair/service 	<ul style="list-style-type: none"> Replace all parts in the system, flush the system 	<ul style="list-style-type: none"> Flush the system

Remember during installation

- Nissens' installation and warranty guide is always included in the box of all Nissens' compressors or available online at www.nissens.com/guides or by scanning the QR code.



- Safety first** - wear protection gloves and glasses



Compressor placement in the system

The compressor is the heart of the air conditioning system. The refrigerant is compressed by the compressor and transported through the system to create high and low pressure. The compressor is crucial for the efficiency of the AC system.

During an AC cycle, the compressor enables the coolant to change its form from gas to liquid and flow through the components of the system as well as through high and low pressure sides.

